A typical case of nutcracker phenomenon

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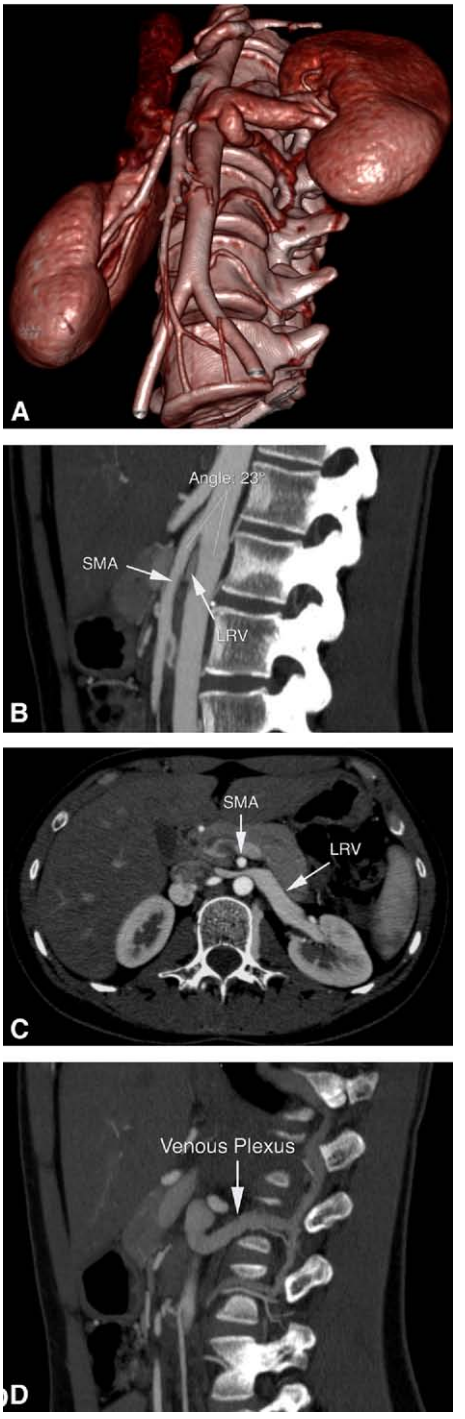
A 23-year-old woman was admitted to our hospital for the evaluation of persistent back pain and left flank. Urinalysis revealed proteinuria and microscopic hematuria. A computed tomography (CT) was performed with evidence of a compression of the left renal vein between the superior mesenteric artery and abdominal aorta (A, Cover). Once the diagnosis of a typical nutcracker syndrome was established, the patient was informed of the risks and benefits of the available treatments: surveillance, open surgery, and endovascular approach with stent implantation. She refused all of the treatments including the endovascular approach that we recommended, preferring to wait and postpone an eventual treatment, despite the persistence of symptoms.[1]

The nucracker phenomenon refers to compression of the left renal vein (LRV) between the superior mesenteric artery (SMA) and the abdominal aorta. The physiologic angle between these structures is greater than 35 degrees.[1] Patients with nutcracker syndrome have frequently this angle significantly reduced (B). It results in left renal venous hypertension causing an uncommon syndrome characterized by unilateral hematuria, pelviureteral varices, and left flank or back pain. This condition is relatively more frequent in young or middle-aged women. Dysmenorrhea, dyspareunia, lower abdominal pain, and pelvic, vulvar, gluteal, or thigh varices are other common additional symptoms forming the "pelvic congestion syndrome".[2] The sequence of diagnostic tests should depend on the mode of presentation: duplex ultrasonography, CT imaging, magnetic resonance imaging, or venography with measurements of abnormal pressure gradient between the LRV and the inferior vena cava. In this case, the CT scan showed the typical image of compression of LRV (C) and dilatation of the paravertebral venous plexus (D), probably responsible for the symptoms described. Treatment of this syndrome is still controversial. Conservative therapy has been proposed for cases with mild, painless hematuria and in particular for pubertal patients because of the likelihood of spontaneous remission possibly due to physical development. Surgery, which is indicated for massive hematuria and severe pain, includes venolysis with lowering of the LRV, anterior nephropexy, and renal bypass with vein or graft interposition. Endovascular approach with stent implantation has been reported as a safe and effective technique.[3]



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